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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,213	08/28/2003	Anthony C. Gilby	WAA-248 C1	7163

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EXAMINER	
GEISEL, KARA E	

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H·A

Office Action Summary	Application No.	Applicant(s)	
	10/650,213	GILBY, ANTHONY C.	
	Examiner	Art Unit	
	Kara E. Geisel	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-10 and 16* is/are allowed.

6)☒ Claim(s) *11-15,17-19,21-23 and 27-29* is/are rejected.

7)☒ Claim(s) *20 and 24-26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon an application filed in WIPO on March 1st, 2002. A claim for priority under 35 U.S.C. 119(a)-(d) cannot be based on said application, since the United States application was filed more than twelve months thereafter.

If the application being examined is an original application filed under 35 U.S.C. 111(a) (other than a design application) on or after November 29, 2000, the claim for priority must be presented during the pendency of the application, and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior foreign application. See 37 CFR 1.55(a)(1)(i). If the application being examined has entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the claim for priority must be made during the pendency of the application and within the time limit set forth in the PCT and Regulations of the PCT. See 37 CFR 1.55(a)(1)(ii). Any claim for priority under 35 U.S.C. 119(a)-(d) or (f) or 365(a) or (b) not presented within the time period set forth in 37 CFR 1.55(a)(1) is considered to have been waived. If a claim for foreign priority is presented after the time period set forth in 37 CFR 1.55(a)(1), the claim may be accepted if the claim properly identifies the prior foreign application and is accompanied by a grantable petition to accept an unintentionally delayed claim for priority. See 37 CFR 1.55(c).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject

matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11-15, 17-19, 21-23, and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (USPN 5,444,807) in view of Doyle (USPN 6,795,177).

In regards to claim 11, Liu discloses a method for measuring fluorescence from a liquid sample (column 1, lines 15-29) comprising passing the liquid sample through a flow channel (fig. 3, 10), directing an excitation beam axially though the flow channel (22 and column 6, lines 66-68), emitting fluorescence through an emission window substantially parallel to a long axis of the flow channel (emissions window defined as the cell wall), and detecting the fluorescence from the sample liquid (24 and column7, lines 8-15). Liu does not disclose retro-reflecting the excitation beam back through the flow channel, both passes generating fluorescence.

Doyle discloses a flow cell including a measuring device for measuring features of a liquid sample (column 1, lines 15-20), comprising passing the liquid sample through a flow channel (fig. 5, 18), directing an excitation beam axially through the flow channel (fig. 11, 11), and detecting the features from the sample liquid (column 1, lines 37-42). A mirror (fig. 5, 140) is used for retro-reflecting the excitation beam back through the flow channel, both passes generating fluorescence. The mirror is used to enhance the signal level, which is done by increasing the amount of radiation the sample receives which is caused by folding the beam back through the sample, and by reflecting the emitted light back through the sample, therefore increasing the amount of emitted light to be detected. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include in Liu's device for measuring fluorescence from a liquid sample a mirror at the distal end of the flow cell in order to enhance the fluorescent signal level that is detected by increasing the amount of radiation the sample receives, and by increasing the amount of emitted light to be detected.

In regards to claims 12-13, it is not disclosed what light source is used for measuring fluorescence from a liquid sample. However, it is disclosed that a light source is used to excite the sample (Liu column

6, lines 30-34). The examiner takes Official Notice that light sources such as Xenon arc, Xenon/Mercury arc, Deuterium arc, and a Tungsten Halogen lamp are very well known in the art for use as excitation light sources. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include one of these light sources in the device for measuring fluorescence from a liquid sample, in order to excite the sample to fluoresce.

In regards to claim 14, the excitation beam is produced from excitation optics in a first plane (Liu fig. 3, 22).

In regards to claim 15, fluorescence is directed to a detector (fig. 3, 24) by emission optics (26 and the wall of 10) that are in a second plane perpendicular to the first plane.

In regards to claim 17, Liu discloses a flow cell for photometric analysis (fig. 3) comprising a cell body (10), a flow channel formed in the body having an input means (12) and output means (13), a light input means (22) positioned axially to the cell body where the light input means and the cell body are within a first plane, a light source means (column 6, lines 30-34) for emitting an excitation beam of a predetermined wavelength, wherein the excitation beam flows axially though the flow channel producing fluorescence, a light output means positioned substantially parallel to a long axis of the flow channel and to the first plane of the cell body (light output means defined as the cell wall), a means for reflecting the fluorescence toward the light output means (26), and a light detector means (24) positioned contiguous to the light output means. It is not disclosed that there is a means for retro-reflecting the excitation beam back through the flow channel.

Doyle discloses a flow cell including a measuring device for measuring features of a liquid sample (column 1, lines 15-20), comprising a flow channel (fig. 5, 18), means for directing an excitation beam axially through the flow channel (fig. 11, 11), and a detector for detecting the features from the sample liquid (column 1, lines 37-42). A mirror (fig. 5, 140) is used for retro-reflecting the excitation beam back through the flow channel. The mirror is used to enhance the signal level, which is done by

increasing the amount of radiation the sample receives which is caused by folding the beam back through the sample, and by reflecting the emitted light back through the sample, therefore increasing the amount of emitted light to be detected. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include in Liu's device for measuring fluorescence from a liquid sample a means for retro-reflecting the beam back through the flow channel, such as a mirror at the distal end of the flow cell in order to enhance the fluorescent signal level that is detected by increasing the amount of radiation the sample receives, and by increasing the amount of emitted light to be detected.

In regards to claims 18-19, it is not disclosed what light source is used for measuring fluorescence from a liquid sample. However, it is disclosed that a light source is used to excite the sample (Liu column 6, lines 30-34). The examiner takes Official Notice that light sources such as Xenon arc, Xenon/Mercury arc, Deuterium arc, and a Tungsten Halogen lamp are very well known in the art for use as excitation light sources. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include one of these light sources in the device for measuring fluorescence from a liquid sample, in order to excite the sample to fluoresce.

In regards to claim 21, the means for reflecting the fluorescence comprises a mirrored surface opposite the light output means (Liu fig. 3, 26).

In regards to claim 22, the light output means comprises a transparent window (the cell wall, which is transparent to the excitation light is defined as the transparent window).

In regards to claim 23, while no lens is disclosed in Liu, a light source directs a light beam into a flow cell via an optical fiber (Liu column 6, lines 30-34). The examiner takes Official Notice that it is well known in the art to place a lens between the laser and the light source, thereby being part of the light input means, in order to direct the entire light beam from the light source, into the optical fiber. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was

made to include a lens in the light input means in order to direct the entire light beam from the light source, into the optical fiber.

In regards to claims 27-28, the reflecting means of the combined apparatus does not disclose what material it is made out of, however it is disclosed that the reflecting means is a mirror (column 7, lines 10-15). The examiner takes Official Notice, that it is well known in the art to have aluminum, gold, or silver coated quartz sheet as a mirror, since they are good reflectors in the UV and visible ranges. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the mirror be a quartz sheet with an evaporated coating of aluminum, gold, or silver as the means to reflect the visible or UV fluorescence.

In regards to claim 29, the first plane is a horizontal plane, and the second plane is a vertical plane (Liu fig. 3).

Allowable Subject Matter

Claims 1-10 and 16 are allowed over the prior art of record.

Claims 20, 24-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As to claim 1, the prior art of record, taken alone or in combination, fails to disclose or render obvious a flow cell for photometric analysis comprising an excitation lens positioned within the proximal end of a flow channel, and a retro-reflecting mirrored lens positioned at the distal end of the flow channel, in combination with the rest of the limitations of claim 1.

As to claim 16, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method of constructing a flow cell comprising fusing lenses to both ends of assembled plates, in combination with the rest of the limitations of claim 16.

As to claim 20, the prior art of record, taken alone or in combination, fails to disclose or render obvious a flow cell for photometric analysis wherein a means for retro-reflecting an excitation beam comprises a mirrored optical lens, in combination with the rest of the limitations of claim 20.

As to claim 24, the prior art of record, taken alone or in combination, fails to disclose or render obvious a flow cell for photometric analysis wherein a cell body comprises plates of various dimensions being forms from clear quartz and black quartz, in combination with the rest of the limitations of claim 24.

As to claim 25, the prior art of record, taken alone or in combination, fails to disclose or render obvious a flow cell for photometric analysis wherein a retro-reflecting means comprises coating the back of an optical lens with evaporated metal chosen from the set consisting of aluminum, silver, and gold, in combination with the rest of the limitations of claim 25.

Additional Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art made of record is Harju et al. (USPN 5,780,857), van den Engh (US Pubs 2002/017827), van den Engh et al. (US Pubs 2003/0202175), and Booker et al. (US Pubs 2005/0012929).

Harju discloses using a Xenon arc lamp, as an excitation light source for exciting a sample, the light being directed to the sample using an input means such as a lens and a fiber, the lens focusing the beam into the fiber.

Both van den Engh documents disclose using a mirror in a measuring instrument for reflecting UV and visible rays, wherein the mirror is a quartz plate coated with aluminum, silver, or gold.

Booker discloses using both a Xenon arc lamp and a Tungsten Halogen lamp, as excitation light sources for exciting a sample, the light being directed to the sample using an input means such as a lens and a fiber, the lens focusing the beam into the fiber.

Conclusion

Several facts have been relied upon from the personal knowledge of the examiner about which the examiner took Official Notice in this Office Action mailed. Applicant must seasonably challenge well known statements and statements based on personal knowledge when they are made by the Board of Patent Appeals and Interferences. In re Selmi, 156 F.2d 96, 70 USPQ 197 (CCPA 1946); In re Fischer, 125 F.2d 725, 52 USPQ 473 (CCPA 1942). See also In re Boon, 439 F.2d 724, 169 USPQ 231 (CCPA 1971) (a challenge to the taking of judicial notice must contain adequate information or argument to create on its face a reasonable doubt regarding the circumstances justifying the judicial notice). If applicant does not seasonably traverse the well-known statement during examination, then the object of the well-known statement is taken to be admitted prior art. In re Chevenard, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). A seasonable challenge constitutes a demand for evidence made as soon as practicable during prosecution. Thus, applicant is charged with rebutting the well-known statement in the **next reply** after the Office action in which the well-known statement was made.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kara E Geisel whose telephone number is **571 272 2416**. The examiner can normally be reached on Monday through Friday, 8am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on **571 272 2800 ext. 77**. The fax phone number for the organization where this application or proceeding is assigned is **571 273 8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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SPE
Art Unit 2877

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K.G.

KEG
September 26, 2005